Corfield et al.

DOMAIN 1: Participants		
A. Risk of Bias		
1.1 Were appropriate data sources used, e.g. cohort, RCT or ne	ested case-control study	Yes
data?		
1.2 Were all inclusions and exclusions of participants appropriate?	?	Yes
Risk of bias introduced by selection of participants	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the included participants and setting do not	CONCERN:	Low
match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 2: Predictors		
A. Risk of Bias		
2.1 Were predictors defined and assessed in a similar way for all	participants?	Yes
2.2 Were predictor assessments made without knowledge of outc	ome data?	Yes
2.3 Are all predictors available at the time the model is intended	to be used?	Yes
Risk of bias introduced by predictors or their assessment	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the definition, assessment or timing of predictors in	CONCERN:	Low
the model do not match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 3: Outcome			
A. Risk of Bias			
3.1 Was the outcome determined appropriately?		Yes	
3.2 Was a pre-specified or standard outcome definition used?		Yes	
3.3 Were predictors excluded from the outcome definition?		Yes	
3.4 Was the outcome defined and determined in a similar way for	or all participants?	Yes	
3.5 Was the outcome determined without knowledge of predicto	r information?	Yes	
3.6 Was the time interval between predictor assessment and outcome determination		No information	
appropriate?			
Risk of bias introduced by the outcome or its determination RISK:		Unclear	
	(low/ high/ unclear)		
Rationale of bias rating:			
Did not report the time of calculating score			
B. Applicability	B. Applicability		
Concern that the outcome, its definition, timing or	CONCERN:	Unclear	
determination do not match the review question	(low/ high/ unclear)		
Rationale of applicability rating:			
Did not report the time of calculating score			

DOMAIN 4: Analysis		
Risk of Bias		
4.1 Were there a reasonable number of participants with the outco	me?	Yes
4.2 Were continuous and categorical predictors handled appropria	tely?	Yes
4.3 Were all enrolled participants included in the analysis?		Yes
4.4 Were participants with missing data handled appropriately?		No
4.5 Was selection of predictors based on univariable analysis avoided?		Yes
4.6 Were complexities in the data (e.g. censoring, competing risks, sampling of controls)		Yes
accounted for appropriately?		
4.7 Were relevant model performance measures evaluated appropriately?		Yes
4.8 Were model overfitting and optimism in model performance accounted for?		Not applicable
4.9 Do predictors and their assigned weights in the final model correspond to the results		Not applicable
from multivariable analysis?		
Risk of bias introduced by the analysis RISK:		Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Patients with missing value were excluded		

Churpek et al.

DOMAIN 1: Participants		
A. Risk of Bias		
1.1 Were appropriate data sources used, e.g. cohort, RCT or ne	ested case-control study	Yes
data?		
1.2 Were all inclusions and exclusions of participants appropriate	?	Yes
Risk of bias introduced by selection of participants	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the included participants and setting do not	CONCERN:	Low
match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 2: Predictors		
A. Risk of Bias		
2.1 Were predictors defined and assessed in a similar way for all p	participants?	Yes
2.2 Were predictor assessments made without knowledge of outco	ome data?	Yes
2.3 Are all predictors available at the time the model is intended to	be used?	Yes
Risk of bias introduced by predictors or their assessment	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the definition, assessment or timing of predictors in	CONCERN:	Low
the model do not match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 3: Outcome			
A. Risk of Bias			
3.1 Was the outcome determined appropriately?		Yes	
3.2 Was a pre-specified or standard outcome definition used?		Yes	
3.3 Were predictors excluded from the outcome definition?		Yes	
3.4 Was the outcome defined and determined in a similar way for	or all participants?	Yes	
3.5 Was the outcome determined without knowledge of predicto	r information?	Yes	
3.6 Was the time interval between predictor assessment and outcome determination		No information	
appropriate?			
Risk of bias introduced by the outcome or its determination RISK:		Unclear	
	(low/ high/ unclear)		
Rationale of bias rating:			
Did not report the time of calculating score			
B. Applicability	B. Applicability		
Concern that the outcome, its definition, timing or	CONCERN:	Unclear	
determination do not match the review question	(low/ high/ unclear)		
Rationale of applicability rating:			
Did not report the time of calculating score			

DOMAIN 4: Analysis		
Risk of Bias		
4.1 Were there a reasonable number of participants with the outco	ome?	Yes
4.2 Were continuous and categorical predictors handled appropria	itely?	Yes
4.3 Were all enrolled participants included in the analysis?		Yes
4.4 Were participants with missing data handled appropriately?		No
4.5 Was selection of predictors based on univariable analysis avoided?		Yes
4.6 Were complexities in the data (e.g. censoring, competing risks, sampling of controls)		Yes
accounted for appropriately?		
4.7 Were relevant model performance measures evaluated appropriately?		Yes
4.8 Were model overfitting and optimism in model performance accounted for?		Not applicable
4.9 Do predictors and their assigned weights in the final model correspond to the results		Not applicable
from multivariable analysis?		
Risk of bias introduced by the analysis	RISK:	Low
	(low/ high/ unclear)	

Rationale of bias rating:

Previous values were pulled forward if they were missing, and if no previous values were available, a median value was imputed

Goulden et al.

DOMAIN 1: Participants		
A. Risk of Bias		
1.1 Were appropriate data sources used, e.g. cohort, RCT or ne	ested case-control study	Yes
data?		
1.2 Were all inclusions and exclusions of participants appropriate	?	Yes
Risk of bias introduced by selection of participants	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the included participants and setting do not	CONCERN:	Low
match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 2: Predictors		
A. Risk of Bias		
2.1 Were predictors defined and assessed in a similar way for all p	participants?	Yes
2.2 Were predictor assessments made without knowledge of outco	ome data?	Yes
2.3 Are all predictors available at the time the model is intended to	o be used?	Yes
Risk of bias introduced by predictors or their assessment	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the definition, assessment or timing of predictors in	CONCERN:	Low
the model do not match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 3: Outcome		
A. Risk of Bias		
3.1 Was the outcome determined appropriately?		Yes
3.2 Was a pre-specified or standard outcome definition used?		Yes
3.3 Were predictors excluded from the outcome definition?		Yes
3.4 Was the outcome defined and determined in a similar way fo	or all participants?	Yes
3.5 Was the outcome determined without knowledge of predictor information?		Yes
3.6 Was the time interval between predictor assessment and outcome determination		Yes
appropriate?		
Risk of bias introduced by the outcome or its determination	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the outcome, its definition, timing or	CONCERN:	Low
determination do not match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 4: Analysis		
Risk of Bias		
4.1 Were there a reasonable number of participants with the outco	me?	Yes
4.2 Were continuous and categorical predictors handled appropria	tely?	Yes
4.3 Were all enrolled participants included in the analysis?		Yes
4.4 Were participants with missing data handled appropriately?		Yes
4.5 Was selection of predictors based on univariable analysis avoided?		Yes
4.6 Were complexities in the data (e.g. censoring, competing risks, sampling of controls)		Yes
accounted for appropriately?		
4.7 Were relevant model performance measures evaluated appropriately?		Yes
4.8 Were model overfitting and optimism in model performance accounted for?		Not applicable
4.9 Do predictors and their assigned weights in the final model correspond to the results		Not applicable
from multivariable analysis?		
Risk of bias introduced by the analysis RISK:		Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		

Groot et al.

DOMAIN 1: Participants		
A. Risk of Bias		
1.1 Were appropriate data sources used, e.g. cohort, RCT or ne	ested case-control study	Yes
data?		
1.2 Were all inclusions and exclusions of participants appropriate	?	Yes
Risk of bias introduced by selection of participants	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the included participants and setting do not	CONCERN:	Low
match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 2: Predictors		
A. Risk of Bias		
2.1 Were predictors defined and assessed in a similar way for all I	participants?	Yes
2.2 Were predictor assessments made without knowledge of outco	ome data?	Yes
2.3 Are all predictors available at the time the model is intended to	o be used?	Yes
Risk of bias introduced by predictors or their assessment	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the definition, assessment or timing of predictors in	CONCERN:	Low
the model do not match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 3: Outcome		
A. Risk of Bias		
3.1 Was the outcome determined appropriately?		Yes
3.2 Was a pre-specified or standard outcome definition used?		Yes
3.3 Were predictors excluded from the outcome definition?		Yes
3.4 Was the outcome defined and determined in a similar way fo	or all participants?	Yes
3.5 Was the outcome determined without knowledge of predictor	r information?	Yes
3.6 Was the time interval between predictor assessment and	outcome determination	Yes
appropriate?		
Risk of bias introduced by the outcome or its determination	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the outcome, its definition, timing or	CONCERN:	Low
determination do not match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 4: Analysis		
Risk of Bias		
4.1 Were there a reasonable number of participants with the outco	me?	Yes
4.2 Were continuous and categorical predictors handled appropria	tely?	Yes
4.3 Were all enrolled participants included in the analysis?		Yes
4.4 Were participants with missing data handled appropriately?		No
4.5 Was selection of predictors based on univariable analysis avoided?		Yes
4.6 Were complexities in the data (e.g. censoring, competing risks, sampling of controls)		Yes
accounted for appropriately?		
4.7 Were relevant model performance measures evaluated appropriately?		Yes
4.8 Were model overfitting and optimism in model performance accounted for?		Not applicable
4.9 Do predictors and their assigned weights in the final model correspond to the results		Not applicable
from multivariable analysis?		
Risk of bias introduced by the analysis RISK:		High
	(low/ high/ unclear)	
Rationale of bias rating:		
Missing data were assumed to be normal		

Camm et al.

DOMAIN 1: Participants		
A. Risk of Bias		
1.1 Were appropriate data sources used, e.g. cohort, RCT or ne	ested case-control study	Yes
data?		
1.2 Were all inclusions and exclusions of participants appropriate	?	Yes
Risk of bias introduced by selection of participants	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the included participants and setting do not	CONCERN:	Low
match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 2: Predictors		
A. Risk of Bias		
2.1 Were predictors defined and assessed in a similar way for all I	participants?	Yes
2.2 Were predictor assessments made without knowledge of outco	ome data?	Yes
2.3 Are all predictors available at the time the model is intended to	o be used?	Yes
Risk of bias introduced by predictors or their assessment	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the definition, assessment or timing of predictors in	CONCERN:	Low
the model do not match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 3: Outcome		
A. Risk of Bias		
3.1 Was the outcome determined appropriately?		Yes
3.2 Was a pre-specified or standard outcome definition used?		Yes
3.3 Were predictors excluded from the outcome definition?		Yes
3.4 Was the outcome defined and determined in a similar way fo	or all participants?	Yes
3.5 Was the outcome determined without knowledge of predictor	r information?	Yes
3.6 Was the time interval between predictor assessment and	outcome determination	Unclear
appropriate?		
Risk of bias introduced by the outcome or its determination	RISK:	Unclear
	(low/ high/ unclear)	
Rationale of bias rating:		
Did not report the time of calculating scores		
B. Applicability		
Concern that the outcome, its definition, timing or	CONCERN:	Unclear
determination do not match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Did not report the time of calculating scores		

DOMAIN 4: Analysis		
Risk of Bias		
4.1 Were there a reasonable number of participants with the outco	me?	Yes
4.2 Were continuous and categorical predictors handled appropria	tely?	Yes
4.3 Were all enrolled participants included in the analysis?		Yes
4.4 Were participants with missing data handled appropriately?		No
4.5 Was selection of predictors based on univariable analysis avoided?		Yes
4.6 Were complexities in the data (e.g. censoring, competing risks, sampling of controls)		Yes
accounted for appropriately?		
4.7 Were relevant model performance measures evaluated appropriately?		Yes
4.8 Were model overfitting and optimism in model performance accounted for?		Not applicable
4.9 Do predictors and their assigned weights in the final model correspond to the results		Not applicable
from multivariable analysis?		
Risk of bias introduced by the analysis RISK:		High
	(low/ high/ unclear)	
Rationale of bias rating:		
Patients with missing data were excluded		

Lynn et al.

DOMAIN 1: Participants		
A. Risk of Bias		
1.1 Were appropriate data sources used, e.g. cohort, RCT or ne	sted case-control study	Yes
data?		
1.2 Were all inclusions and exclusions of participants appropriate?	?	Yes
Risk of bias introduced by selection of participants	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the included participants and setting do not	CONCERN:	Low
match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 2: Predictors		
A. Risk of Bias		
2.1 Were predictors defined and assessed in a similar way for all 1	participants?	Yes
2.2 Were predictor assessments made without knowledge of outco	ome data?	Yes
2.3 Are all predictors available at the time the model is intended to	o be used?	Yes
Risk of bias introduced by predictors or their assessment	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the definition, assessment or timing of predictors in	CONCERN:	Low
the model do not match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 3: Outcome		
A. Risk of Bias		
3.1 Was the outcome determined appropriately?		Yes
3.2 Was a pre-specified or standard outcome definition used?		Yes
3.3 Were predictors excluded from the outcome definition?		Yes
3.4 Was the outcome defined and determined in a similar way fo	or all participants?	Yes
3.5 Was the outcome determined without knowledge of predictor	r information?	Yes
3.6 Was the time interval between predictor assessment and	outcome determination	Yes
appropriate?		
Risk of bias introduced by the outcome or its determination	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the outcome, its definition, timing or	CONCERN:	Low
determination do not match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 4: Analysis		
Risk of Bias		
4.1 Were there a reasonable number of participants with the outco	me?	Yes
4.2 Were continuous and categorical predictors handled appropria	tely?	Yes
4.3 Were all enrolled participants included in the analysis?		Yes
4.4 Were participants with missing data handled appropriately?		No information
4.5 Was selection of predictors based on univariable analysis avoided?		Yes
4.6 Were complexities in the data (e.g. censoring, competing risks, sampling of controls)		Yes
accounted for appropriately?		
4.7 Were relevant model performance measures evaluated appropriately?		Yes
4.8 Were model overfitting and optimism in model performance accounted for?		Not applicable
4.9 Do predictors and their assigned weights in the final model correspond to the results		Not applicable
from multivariable analysis?		
Risk of bias introduced by the analysis	RISK:	Unclear
	(low/ high/ unclear)	
Rationale of bias rating:		
Did not report the missing data		

Brink et al.

DOMAIN 1: Participants		
A. Risk of Bias		
1.1 Were appropriate data sources used, e.g. cohort, RCT or ne	ested case-control study	No
data?		
1.2 Were all inclusions and exclusions of participants appropriate?	?	Yes
Risk of bias introduced by selection of participants	RISK:	High
	(low/ high/ unclear)	
Rationale of bias rating:		
It is a retrospective cohort study		
B. Applicability		
Concern that the included participants and setting do not	CONCERN:	Low
match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 2: Predictors		
A. Risk of Bias		
2.1 Were predictors defined and assessed in a similar way for all	participants?	Yes
2.2 Were predictor assessments made without knowledge of outcomes	ome data?	Yes
2.3 Are all predictors available at the time the model is intended t	to be used?	Yes
Risk of bias introduced by predictors or their assessment	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the definition, assessment or timing of predictors in	CONCERN:	Low
the model do not match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 3: Outcome			
A. Risk of Bias			
3.1 Was the outcome determined appropriately?		Yes	
3.2 Was a pre-specified or standard outcome definition used?		Yes	
3.3 Were predictors excluded from the outcome definition?		Yes	
3.4 Was the outcome defined and determined in a similar way for	or all participants?	Yes	
3.5 Was the outcome determined without knowledge of predictor information?		Yes	
3.6 Was the time interval between predictor assessment and outcome determination		No information	
appropriate?			
Risk of bias introduced by the outcome or its determination RISK:		Unclear	
	(low/ high/ unclear)		
Rationale of bias rating:			
Did not report the time of calculating score			
B. Applicability	B. Applicability		
Concern that the outcome, its definition, timing or	CONCERN:	Unclear	
determination do not match the review question	(low/ high/ unclear)		
Rationale of applicability rating:			
Did not report the time of calculating score			

DOMAIN 4: Analysis		
Risk of Bias		
4.1 Were there a reasonable number of participants with the outco	me?	Yes
4.2 Were continuous and categorical predictors handled appropria	tely?	Yes
4.3 Were all enrolled participants included in the analysis?		Yes
4.4 Were participants with missing data handled appropriately?		No information
4.5 Was selection of predictors based on univariable analysis avoided?		Yes
4.6 Were complexities in the data (e.g. censoring, competing risks, sampling of controls)		Yes
accounted for appropriately?		
4.7 Were relevant model performance measures evaluated appropriately?		Yes
4.8 Were model overfitting and optimism in model performance accounted for?		Not applicable
4.9 Do predictors and their assigned weights in the final model correspond to the results		Not applicable
from multivariable analysis?		
Risk of bias introduced by the analysis RISK:		Unclear
	(low/ high/ unclear)	
Rationale of bias rating:		
Did not report the missing data		

Szakmany et al.

DOMAIN 1: Participants		
A. Risk of Bias		
1.1 Were appropriate data sources used, e.g. cohort, RCT or ne	ested case-control study	Yes
data?		
1.2 Were all inclusions and exclusions of participants appropriate?	?	Yes
Risk of bias introduced by selection of participants	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the included participants and setting do not	CONCERN:	Low
match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 2: Predictors		
A. Risk of Bias		
2.1 Were predictors defined and assessed in a similar way for all 1	participants?	Yes
2.2 Were predictor assessments made without knowledge of outco	ome data?	Yes
2.3 Are all predictors available at the time the model is intended to	o be used?	Yes
Risk of bias introduced by predictors or their assessment	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the definition, assessment or timing of predictors in	CONCERN:	Low
the model do not match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 3: Outcome		
A. Risk of Bias		
3.1 Was the outcome determined appropriately?		Yes
3.2 Was a pre-specified or standard outcome definition used?		Yes
3.3 Were predictors excluded from the outcome definition?		Yes
3.4 Was the outcome defined and determined in a similar way for all participants?		Yes
3.5 Was the outcome determined without knowledge of predictor information?		Yes
3.6 Was the time interval between predictor assessment and outcome determination		Yes
appropriate?		
Risk of bias introduced by the outcome or its determination	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the outcome, its definition, timing or	CONCERN:	Low
determination do not match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 4: Analysis		
Risk of Bias		
4.1 Were there a reasonable number of participants with the outco	me?	Yes
4.2 Were continuous and categorical predictors handled appropria	tely?	Yes
4.3 Were all enrolled participants included in the analysis?		Yes
4.4 Were participants with missing data handled appropriately?		Yes
4.5 Was selection of predictors based on univariable analysis avoided?		Yes
4.6 Were complexities in the data (e.g. censoring, competing risks, sampling of controls)		Yes
accounted for appropriately?		
4.7 Were relevant model performance measures evaluated appropriately?		Yes
4.8 Were model overfitting and optimism in model performance accounted for?		Not applicable
4.9 Do predictors and their assigned weights in the final model correspond to the results		Not applicable
from multivariable analysis?		
Risk of bias introduced by the analysis RISK:		Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		

Brink et al.

DOMAIN 1: Participants		
A. Risk of Bias		
1.1 Were appropriate data sources used, e.g. cohort, RCT or ne	ested case-control study	Yes
data?		
1.2 Were all inclusions and exclusions of participants appropriate	1.2 Were all inclusions and exclusions of participants appropriate?	
Risk of bias introduced by selection of participants	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the included participants and setting do not	CONCERN:	Low
match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 2: Predictors		
A. Risk of Bias		
2.1 Were predictors defined and assessed in a similar way for all I	participants?	Yes
2.2 Were predictor assessments made without knowledge of outco	ome data?	Yes
2.3 Are all predictors available at the time the model is intended to	o be used?	Yes
Risk of bias introduced by predictors or their assessment	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the definition, assessment or timing of predictors in	CONCERN:	Low
the model do not match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 3: Outcome			
A. Risk of Bias			
3.1 Was the outcome determined appropriately?		Yes	
3.2 Was a pre-specified or standard outcome definition used?		Yes	
3.3 Were predictors excluded from the outcome definition?		Yes	
3.4 Was the outcome defined and determined in a similar way fo	r all participants?	Yes	
3.5 Was the outcome determined without knowledge of predictor	r information?	Yes	
3.6 Was the time interval between predictor assessment and outcome determination		No information	
appropriate?			
Risk of bias introduced by the outcome or its determination RISK:		Unclear	
	(low/ high/ unclear)		
Rationale of bias rating:			
Did not report the time of calculating score			
B. Applicability			
Concern that the outcome, its definition, timing or	CONCERN:	Unclear	
determination do not match the review question	(low/ high/ unclear)		
Rationale of applicability rating:			
Did not report the time of calculating score			

DOMAIN 4: Analysis		
Risk of Bias		
4.1 Were there a reasonable number of participants with the outco	me?	Yes
4.2 Were continuous and categorical predictors handled appropria	tely?	Yes
4.3 Were all enrolled participants included in the analysis?		Yes
4.4 Were participants with missing data handled appropriately?		Yes
4.5 Was selection of predictors based on univariable analysis avoided?		Yes
4.6 Were complexities in the data (e.g. censoring, competing risks, sampling of controls)		Yes
accounted for appropriately?		
4.7 Were relevant model performance measures evaluated appropriately?		Yes
4.8 Were model overfitting and optimism in model performance accounted for?		Not applicable
4.9 Do predictors and their assigned weights in the final model correspond to the results		Not applicable
from multivariable analysis?		
Risk of bias introduced by the analysis RISK:		Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		

Castillo et al.

DOMAIN 1: Participants		
A. Risk of Bias		
1.1 Were appropriate data sources used, e.g. cohort, RCT or ne	ested case-control study	Yes
data?		
1.2 Were all inclusions and exclusions of participants appropriate	?	Yes
Risk of bias introduced by selection of participants RISK:		Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the included participants and setting do not	CONCERN:	Low
match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 2: Predictors		
A. Risk of Bias		
2.1 Were predictors defined and assessed in a similar way for all	participants?	Yes
2.2 Were predictor assessments made without knowledge of outco	ome data?	Yes
2.3 Are all predictors available at the time the model is intended t	o be used?	Yes
Risk of bias introduced by predictors or their assessment	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the definition, assessment or timing of predictors in	CONCERN:	Low
the model do not match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 3: Outcome		
A. Risk of Bias		
3.1 Was the outcome determined appropriately?		Yes
3.2 Was a pre-specified or standard outcome definition used?		Yes
3.3 Were predictors excluded from the outcome definition?		Yes
3.4 Was the outcome defined and determined in a similar way for	or all participants?	Yes
3.5 Was the outcome determined without knowledge of predicto	r information?	Yes
3.6 Was the time interval between predictor assessment and outcome determination		Yes
appropriate?		
Risk of bias introduced by the outcome or its determination	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the outcome, its definition, timing or	CONCERN:	Low
determination do not match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 4: Analysis		
Risk of Bias		
4.1 Were there a reasonable number of participants with the outco	me?	Yes
4.2 Were continuous and categorical predictors handled appropria	tely?	Yes
4.3 Were all enrolled participants included in the analysis?		Yes
4.4 Were participants with missing data handled appropriately?		Yes
4.5 Was selection of predictors based on univariable analysis avoided?		Yes
4.6 Were complexities in the data (e.g. censoring, competing risks, sampling of controls)		Yes
accounted for appropriately?		
4.7 Were relevant model performance measures evaluated appropriately?		Yes
4.8 Were model overfitting and optimism in model performance accounted for?		Not applicable
4.9 Do predictors and their assigned weights in the final model correspond to the results		Not applicable
from multivariable analysis?		
Risk of bias introduced by the analysis RISK:		Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		

Chiew et al.

DOMAIN 1: Participants		
A. Risk of Bias		
1.1 Were appropriate data sources used, e.g. cohort, RCT or ne	ested case-control study	Yes
data?		
1.2 Were all inclusions and exclusions of participants appropriate	?	Yes
Risk of bias introduced by selection of participants	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the included participants and setting do not	CONCERN:	Low
match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 2: Predictors		
A. Risk of Bias		
2.1 Were predictors defined and assessed in a similar way for all I	participants?	Yes
2.2 Were predictor assessments made without knowledge of outco	ome data?	Yes
2.3 Are all predictors available at the time the model is intended to	o be used?	Yes
Risk of bias introduced by predictors or their assessment	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the definition, assessment or timing of predictors in	CONCERN:	Low
the model do not match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 3: Outcome		
A. Risk of Bias		
3.1 Was the outcome determined appropriately?		Yes
3.2 Was a pre-specified or standard outcome definition used?		Yes
3.3 Were predictors excluded from the outcome definition?		Yes
3.4 Was the outcome defined and determined in a similar way fo	r all participants?	Yes
3.5 Was the outcome determined without knowledge of predictor	r information?	Yes
3.6 Was the time interval between predictor assessment and outcome determination		Yes
appropriate?		
Risk of bias introduced by the outcome or its determination	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the outcome, its definition, timing or	CONCERN:	Low
determination do not match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 4: Analysis		
Risk of Bias		
4.1 Were there a reasonable number of participants with the outco	me?	Yes
4.2 Were continuous and categorical predictors handled appropria	tely?	Yes
4.3 Were all enrolled participants included in the analysis?		Yes
4.4 Were participants with missing data handled appropriately?		No information
4.5 Was selection of predictors based on univariable analysis avoided?		Yes
4.6 Were complexities in the data (e.g. censoring, competing risks, sampling of controls)		Yes
accounted for appropriately?		
4.7 Were relevant model performance measures evaluated appropriately?		Yes
4.8 Were model overfitting and optimism in model performance accounted for?		Not applicable
4.9 Do predictors and their assigned weights in the final model correspond to the results		Not applicable
from multivariable analysis?		
Risk of bias introduced by the analysis RISK:		Unclear
	(low/ high/ unclear)	
Rationale of bias rating:		
Did not report the missing data		

Fernando et al.

DOMAIN 1: Participants			
A. Risk of Bias			
1.1 Were appropriate data sources used, e.g. cohort, RCT or ne	ested case-control study	Yes	
data?			
1.2 Were all inclusions and exclusions of participants appropriate?		No	
Risk of bias introduced by selection of participants RISK:		High	
	(low/ high/ unclear)		
Rationale of bias rating:	Rationale of bias rating:		
Included patients fulfilled the rapid response team calling criteria			
B. Applicability			
Concern that the included participants and setting do not	CONCERN:	High	
match the review question	(low/ high/ unclear)		
Rationale of applicability rating:			
Included patients fulfilled the rapid response team calling criteria			

DOMAIN 2: Predictors		
A. Risk of Bias		
2.1 Were predictors defined and assessed in a similar way for all 1	participants?	Yes
2.2 Were predictor assessments made without knowledge of outco	ome data?	Yes
2.3 Are all predictors available at the time the model is intended t	o be used?	Yes
Risk of bias introduced by predictors or their assessment	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the definition, assessment or timing of predictors in	CONCERN:	Low
the model do not match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 3: Outcome		
A. Risk of Bias		
3.1 Was the outcome determined appropriately?		Yes
3.2 Was a pre-specified or standard outcome definition used?		Yes
3.3 Were predictors excluded from the outcome definition?		Yes
3.4 Was the outcome defined and determined in a similar way fo	r all participants?	Yes
3.5 Was the outcome determined without knowledge of predictor	r information?	Yes
3.6 Was the time interval between predictor assessment and outcome determination		Yes
appropriate?		
Risk of bias introduced by the outcome or its determination	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the outcome, its definition, timing or	CONCERN:	Low
determination do not match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 4: Analysis		
Risk of Bias		
4.1 Were there a reasonable number of participants with the outco	me?	Yes
4.2 Were continuous and categorical predictors handled appropria	tely?	Yes
4.3 Were all enrolled participants included in the analysis?		Yes
4.4 Were participants with missing data handled appropriately?		No
4.5 Was selection of predictors based on univariable analysis avoided?		Yes
4.6 Were complexities in the data (e.g. censoring, competing risks, sampling of controls)		Yes
accounted for appropriately?		
4.7 Were relevant model performance measures evaluated appropriately?		Yes
4.8 Were model overfitting and optimism in model performance accounted for?		Not applicable
4.9 Do predictors and their assigned weights in the final model correspond to the results		Not applicable
from multivariable analysis?		
Risk of bias introduced by the analysis RISK:		High
	(low/ high/ unclear)	
Rationale of bias rating:		
Patients with missing value were excluded		

Melhammar et al.

DOMAIN 1: Participants		
A. Risk of Bias		
1.1 Were appropriate data sources used, e.g. cohort, RCT or ne	sted case-control study	Yes
data?		
1.2 Were all inclusions and exclusions of participants appropriate?)	Yes
Risk of bias introduced by selection of participants RISK:		Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the included participants and setting do not	CONCERN:	Low
match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 2: Predictors		
A. Risk of Bias		
2.1 Were predictors defined and assessed in a similar way for all	participants?	Yes
2.2 Were predictor assessments made without knowledge of outc	ome data?	Yes
2.3 Are all predictors available at the time the model is intended	to be used?	Yes
Risk of bias introduced by predictors or their assessment	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the definition, assessment or timing of predictors in	CONCERN:	Low
the model do not match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 3: Outcome		
A. Risk of Bias		
3.1 Was the outcome determined appropriately?		Yes
3.2 Was a pre-specified or standard outcome definition used?		Yes
3.3 Were predictors excluded from the outcome definition?		Yes
3.4 Was the outcome defined and determined in a similar way for	or all participants?	Yes
3.5 Was the outcome determined without knowledge of predictor information?		Yes
3.6 Was the time interval between predictor assessment and outcome determination		Yes
appropriate?		
Risk of bias introduced by the outcome or its determination	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the outcome, its definition, timing or	CONCERN:	Low
determination do not match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 4: Analysis		
Risk of Bias		
4.1 Were there a reasonable number of participants with the outco	me?	Yes
4.2 Were continuous and categorical predictors handled appropria	tely?	Yes
4.3 Were all enrolled participants included in the analysis?		Yes
4.4 Were participants with missing data handled appropriately?		No
4.5 Was selection of predictors based on univariable analysis avoided?		Yes
4.6 Were complexities in the data (e.g. censoring, competing risks, sampling of controls)		Yes
accounted for appropriately?		
4.7 Were relevant model performance measures evaluated appropriately?		Yes
4.8 Were model overfitting and optimism in model performance accounted for?		Not applicable
4.9 Do predictors and their assigned weights in the final model correspond to the results		Not applicable
from multivariable analysis?		
Risk of bias introduced by the analysis RISK:		High
	(low/ high/ unclear)	
Rationale of bias rating:		
Patients with missing value were excluded		

Pong et al.

DOMAIN 1: Participants		
A. Risk of Bias		
1.1 Were appropriate data sources used, e.g. cohort, RCT or ne	sted case-control study	Yes
data?		
1.2 Were all inclusions and exclusions of participants appropriate?	?	Yes
Risk of bias introduced by selection of participants RISK:		Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the included participants and setting do not	CONCERN:	Low
match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 2: Predictors		
A. Risk of Bias		
2.1 Were predictors defined and assessed in a similar way for all p	participants?	Yes
2.2 Were predictor assessments made without knowledge of outco	ome data?	Yes
2.3 Are all predictors available at the time the model is intended to	be used?	Yes
Risk of bias introduced by predictors or their assessment	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the definition, assessment or timing of predictors in	CONCERN:	Low
the model do not match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 3: Outcome		
A. Risk of Bias		
3.1 Was the outcome determined appropriately?		Yes
3.2 Was a pre-specified or standard outcome definition used?		Yes
3.3 Were predictors excluded from the outcome definition?		Yes
3.4 Was the outcome defined and determined in a similar way for	or all participants?	Yes
3.5 Was the outcome determined without knowledge of predictor information?		Yes
3.6 Was the time interval between predictor assessment and outcome determination		Yes
appropriate?		
Risk of bias introduced by the outcome or its determination	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the outcome, its definition, timing or	CONCERN:	Low
determination do not match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 4: Analysis		
Risk of Bias		
4.1 Were there a reasonable number of participants with the outco	me?	Yes
4.2 Were continuous and categorical predictors handled appropria	tely?	Yes
4.3 Were all enrolled participants included in the analysis?		Yes
4.4 Were participants with missing data handled appropriately?		Yes
4.5 Was selection of predictors based on univariable analysis avoided?		Yes
4.6 Were complexities in the data (e.g. censoring, competing risks, sampling of controls)		Yes
accounted for appropriately?		
4.7 Were relevant model performance measures evaluated appropriately?		Yes
4.8 Were model overfitting and optimism in model performance accounted for?		Not applicable
4.9 Do predictors and their assigned weights in the final model correspond to the results		Not applicable
from multivariable analysis?		
Risk of bias introduced by the analysis RISK:		Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		

Saeed et al.

DOMAIN 1: Participants		
A. Risk of Bias		
1.1 Were appropriate data sources used, e.g. cohort, RCT or ne	ested case-control study	Yes
data?		
1.2 Were all inclusions and exclusions of participants appropriate	?	Yes
Risk of bias introduced by selection of participants	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the included participants and setting do not	CONCERN:	Low
match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 2: Predictors		
A. Risk of Bias		
2.1 Were predictors defined and assessed in a similar way for all I	participants?	Yes
2.2 Were predictor assessments made without knowledge of outco	ome data?	Yes
2.3 Are all predictors available at the time the model is intended to	o be used?	Yes
Risk of bias introduced by predictors or their assessment	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the definition, assessment or timing of predictors in	CONCERN:	Low
the model do not match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 3: Outcome		
A. Risk of Bias		
3.1 Was the outcome determined appropriately?		Yes
3.2 Was a pre-specified or standard outcome definition used?		Yes
3.3 Were predictors excluded from the outcome definition?		Yes
3.4 Was the outcome defined and determined in a similar way for	or all participants?	Yes
3.5 Was the outcome determined without knowledge of predictor information?		Yes
3.6 Was the time interval between predictor assessment and outcome determination		Yes
appropriate?		
Risk of bias introduced by the outcome or its determination	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the outcome, its definition, timing or	CONCERN:	Low
determination do not match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 4: Analysis		
Risk of Bias		
4.1 Were there a reasonable number of participants with the outco	me?	Yes
4.2 Were continuous and categorical predictors handled appropria	tely?	Yes
4.3 Were all enrolled participants included in the analysis?		Yes
4.4 Were participants with missing data handled appropriately?		No
4.5 Was selection of predictors based on univariable analysis avoided?		Yes
4.6 Were complexities in the data (e.g. censoring, competing risks, sampling of controls)		Yes
accounted for appropriately?		
4.7 Were relevant model performance measures evaluated appropriately?		Yes
4.8 Were model overfitting and optimism in model performance accounted for?		Not applicable
4.9 Do predictors and their assigned weights in the final model correspond to the results		Not applicable
from multivariable analysis?		
Risk of bias introduced by the analysis RISK:		High
	(low/ high/ unclear)	
Rationale of bias rating:		
Patients with missing value were excluded		

Almutary et al.

DOMAIN 1: Participants		
A. Risk of Bias		
1.1 Were appropriate data sources used, e.g. cohort, RCT or no	ested case-control study	Yes
data?		
1.2 Were all inclusions and exclusions of participants appropriate	?	Unclear
Risk of bias introduced by selection of participants RISK:		Unclear
	(low/ high/ unclear)	
Rationale of bias rating:		
Did not report the definition of suspected sepsis		
B. Applicability		
Concern that the included participants and setting do not	CONCERN:	Low
match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 2: Predictors		
A. Risk of Bias		
2.1 Were predictors defined and assessed in a similar way for all I	participants?	Yes
2.2 Were predictor assessments made without knowledge of outco	ome data?	Yes
2.3 Are all predictors available at the time the model is intended to	o be used?	Yes
Risk of bias introduced by predictors or their assessment	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the definition, assessment or timing of predictors in	CONCERN:	Low
the model do not match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 3: Outcome		
A. Risk of Bias		
3.1 Was the outcome determined appropriately?		Yes
3.2 Was a pre-specified or standard outcome definition used?		Yes
3.3 Were predictors excluded from the outcome definition?		Yes
3.4 Was the outcome defined and determined in a similar way for	or all participants?	Yes
3.5 Was the outcome determined without knowledge of predictor information?		Yes
3.6 Was the time interval between predictor assessment and outcome determination		Yes
appropriate?		
Risk of bias introduced by the outcome or its determination	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the outcome, its definition, timing or	CONCERN:	Low
determination do not match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 4: Analysis		
Risk of Bias		
4.1 Were there a reasonable number of participants with the outco	me?	Yes
4.2 Were continuous and categorical predictors handled appropria	tely?	Yes
4.3 Were all enrolled participants included in the analysis?		Yes
4.4 Were participants with missing data handled appropriately?		No information
4.5 Was selection of predictors based on univariable analysis avoided?		Yes
4.6 Were complexities in the data (e.g. censoring, competing risks, sampling of controls)		Yes
accounted for appropriately?		
4.7 Were relevant model performance measures evaluated appropriately?		Yes
4.8 Were model overfitting and optimism in model performance accounted for?		Not applicable
4.9 Do predictors and their assigned weights in the final model correspond to the results		Not applicable
from multivariable analysis?		
Risk of bias introduced by the analysis RISK:		Unclear
	(low/ high/ unclear)	
Rationale of bias rating:		
Did not report the missing data		

Pirattanakorn et al.

DOMAIN 1: Participants		
A. Risk of Bias		
1.1 Were appropriate data sources used, e.g. cohort, RCT or ne	ested case-control study	Yes
data?		
1.2 Were all inclusions and exclusions of participants appropriate	?	No
Risk of bias introduced by selection of participants RISK:		High
	(low/ high/ unclear)	
Rationale of bias rating:		
Some ICU patients were included in analysis		
B. Applicability		
Concern that the included participants and setting do not	CONCERN:	High
match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Some ICU patients were included in analysis		

DOMAIN 2: Predictors		
A. Risk of Bias		
2.1 Were predictors defined and assessed in a similar way for all	participants?	Yes
2.2 Were predictor assessments made without knowledge of outco	ome data?	Yes
2.3 Are all predictors available at the time the model is intended t	o be used?	Yes
Risk of bias introduced by predictors or their assessment	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the definition, assessment or timing of predictors in	CONCERN:	Low
the model do not match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 3: Outcome		
A. Risk of Bias		
3.1 Was the outcome determined appropriately?		Yes
3.2 Was a pre-specified or standard outcome definition used?		Yes
3.3 Were predictors excluded from the outcome definition?		Yes
3.4 Was the outcome defined and determined in a similar way fo	or all participants?	Yes
3.5 Was the outcome determined without knowledge of predictor	r information?	Yes
3.6 Was the time interval between predictor assessment and	outcome determination	Unclear
appropriate?		
Risk of bias introduced by the outcome or its determination RISK:		Unclear
	(low/ high/ unclear)	
Rationale of bias rating:		
Scores were not calculated at hospital admission		
B. Applicability		
Concern that the outcome, its definition, timing or	CONCERN:	High
determination do not match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Scores were not calculated at hospital admission		

DOMAIN 4: Analysis		
Risk of Bias		
4.1 Were there a reasonable number of participants with the outco	me?	Yes
4.2 Were continuous and categorical predictors handled appropria	tely?	Yes
4.3 Were all enrolled participants included in the analysis?		Yes
4.4 Were participants with missing data handled appropriately?		Yes
4.5 Was selection of predictors based on univariable analysis avoided?		Yes
4.6 Were complexities in the data (e.g. censoring, competing risks, sampling of controls)		Yes
accounted for appropriately?		
4.7 Were relevant model performance measures evaluated appropriately?		Yes
4.8 Were model overfitting and optimism in model performance accounted for?		Not applicable
4.9 Do predictors and their assigned weights in the final model correspond to the results		Not applicable
from multivariable analysis?		
Risk of bias introduced by the analysis RISK:		Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		

Phungoen et al.

DOMAIN 1: Participants			
A. Risk of Bias	A. Risk of Bias		
1.1 Were appropriate data sources used, e.g. cohort, RCT or ne	sted case-control study	Yes	
data?			
1.2 Were all inclusions and exclusions of participants appropriate?)	No	
Risk of bias introduced by selection of participants RISK:		High	
	(low/ high/ unclear)		
Rationale of bias rating:			
Retrospective cohort study			
B. Applicability			
Concern that the included participants and setting do not	CONCERN:	Low	
match the review question	(low/ high/ unclear)		
Rationale of applicability rating:			
Match the review question			

DOMAIN 2: Predictors		
A. Risk of Bias		
2.1 Were predictors defined and assessed in a similar way for all p	participants?	Yes
2.2 Were predictor assessments made without knowledge of outco	ome data?	Yes
2.3 Are all predictors available at the time the model is intended to	be used?	Yes
Risk of bias introduced by predictors or their assessment	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the definition, assessment or timing of predictors in	CONCERN:	Low
the model do not match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 3: Outcome		
A. Risk of Bias		
3.1 Was the outcome determined appropriately?		Yes
3.2 Was a pre-specified or standard outcome definition used?		Yes
3.3 Were predictors excluded from the outcome definition?		Yes
3.4 Was the outcome defined and determined in a similar way for	or all participants?	Yes
3.5 Was the outcome determined without knowledge of predictor information?		Yes
3.6 Was the time interval between predictor assessment and outcome determination		Yes
appropriate?		
Risk of bias introduced by the outcome or its determination	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the outcome, its definition, timing or	CONCERN:	Low
determination do not match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 4: Analysis		
Risk of Bias		
4.1 Were there a reasonable number of participants with the outco	me?	Yes
4.2 Were continuous and categorical predictors handled appropria	tely?	Yes
4.3 Were all enrolled participants included in the analysis?		Yes
4.4 Were participants with missing data handled appropriately?		No
4.5 Was selection of predictors based on univariable analysis avoided?		Yes
4.6 Were complexities in the data (e.g. censoring, competing risks, sampling of controls)		Yes
accounted for appropriately?		
4.7 Were relevant model performance measures evaluated appropriately?		Yes
4.8 Were model overfitting and optimism in model performance accounted for?		Not applicable
4.9 Do predictors and their assigned weights in the final model correspond to the results		Not applicable
from multivariable analysis?		
Risk of bias introduced by the analysis RISK:		High
	(low/ high/ unclear)	
Rationale of bias rating:		
Patients with missing value were excluded		

Ruangsomboon et al.

DOMAIN 1: Participants		
A. Risk of Bias		
1.1 Were appropriate data sources used, e.g. cohort, RCT or ne	sted case-control study	Yes
data?		
1.2 Were all inclusions and exclusions of participants appropriate?)	Yes
Risk of bias introduced by selection of participants	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the included participants and setting do not	CONCERN:	Low
match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 2: Predictors		
A. Risk of Bias		
2.1 Were predictors defined and assessed in a similar way for all	participants?	Yes
2.2 Were predictor assessments made without knowledge of outco	ome data?	Yes
2.3 Are all predictors available at the time the model is intended t	o be used?	Yes
Risk of bias introduced by predictors or their assessment	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the definition, assessment or timing of predictors in	CONCERN:	Low
the model do not match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 3: Outcome		
A. Risk of Bias		
3.1 Was the outcome determined appropriately?		Yes
3.2 Was a pre-specified or standard outcome definition used?		Yes
3.3 Were predictors excluded from the outcome definition?		Yes
3.4 Was the outcome defined and determined in a similar way for	or all participants?	Yes
3.5 Was the outcome determined without knowledge of predicto	r information?	Yes
3.6 Was the time interval between predictor assessment and	l outcome determination	Yes
appropriate?		
Risk of bias introduced by the outcome or its determination	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the outcome, its definition, timing or	CONCERN:	Low
determination do not match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 4: Analysis		
Risk of Bias		
4.1 Were there a reasonable number of participants with the outco	me?	Yes
4.2 Were continuous and categorical predictors handled appropria	tely?	Yes
4.3 Were all enrolled participants included in the analysis?		Yes
4.4 Were participants with missing data handled appropriately?		Yes
4.5 Was selection of predictors based on univariable analysis avoided?		Yes
4.6 Were complexities in the data (e.g. censoring, competing risks, sampling of controls)		Yes
accounted for appropriately?		
4.7 Were relevant model performance measures evaluated appropriately?		Yes
4.8 Were model overfitting and optimism in model performance accounted for?		Not applicable
4.9 Do predictors and their assigned weights in the final model correspond to the results		Not applicable
from multivariable analysis?		
Risk of bias introduced by the analysis RISK:		Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		

Wattanasit et al.

DOMAIN 1: Participants		
A. Risk of Bias		
1.1 Were appropriate data sources used, e.g. cohort, RCT or ne	ested case-control study	No
data?		
1.2 Were all inclusions and exclusions of participants appropriate?	?	Yes
Risk of bias introduced by selection of participants	RISK:	High
	(low/ high/ unclear)	
Rationale of bias rating:		
Data was from retrospective cohort study		
B. Applicability		
Concern that the included participants and setting do not	CONCERN:	Low
match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 2: Predictors		
A. Risk of Bias		
2.1 Were predictors defined and assessed in a similar way for all p	participants?	Yes
2.2 Were predictor assessments made without knowledge of outco	ome data?	Yes
2.3 Are all predictors available at the time the model is intended to	be used?	Yes
Risk of bias introduced by predictors or their assessment	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the definition, assessment or timing of predictors in	CONCERN:	Low
the model do not match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 3: Outcome		
A. Risk of Bias		
3.1 Was the outcome determined appropriately?		Yes
3.2 Was a pre-specified or standard outcome definition used?		Yes
3.3 Were predictors excluded from the outcome definition?		Yes
3.4 Was the outcome defined and determined in a similar way fo	r all participants?	Yes
3.5 Was the outcome determined without knowledge of predictor	r information?	Yes
3.6 Was the time interval between predictor assessment and	outcome determination	Low
appropriate?		
Risk of bias introduced by the outcome or its determination	RISK:	Yes
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the outcome, its definition, timing or	CONCERN:	Low
determination do not match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 4: Analysis		
Risk of Bias		
4.1 Were there a reasonable number of participants with the outco	me?	Yes
4.2 Were continuous and categorical predictors handled appropria	tely?	Yes
4.3 Were all enrolled participants included in the analysis?		Yes
4.4 Were participants with missing data handled appropriately?		Yes
4.5 Was selection of predictors based on univariable analysis avoided?		Yes
4.6 Were complexities in the data (e.g. censoring, competing risks, sampling of controls)		Yes
accounted for appropriately?		
4.7 Were relevant model performance measures evaluated appropriately?		Yes
4.8 Were model overfitting and optimism in model performance accounted for?		Not applicable
4.9 Do predictors and their assigned weights in the final model correspond to the results		Not applicable
from multivariable analysis?		
Risk of bias introduced by the analysis RISK:		Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		

Oduncu et al.

DOMAIN 1: Participants		
A. Risk of Bias		
1.1 Were appropriate data sources used, e.g. cohort, RCT or nested	case-control study data?	Yes
1.2 Were all inclusions and exclusions of participants appropriate?		Yes
Risk of bias introduced by selection of participants	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the included participants and setting do not	CONCERN:	Low
match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 2: Predictors		
A. Risk of Bias		
2.1 Were predictors defined and assessed in a similar way for all p	articipants?	Yes
2.2 Were predictor assessments made without knowledge of outco	me data?	Yes
2.3 Are all predictors available at the time the model is intended to	be used?	Yes
Risk of bias introduced by predictors or their assessment	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:	<u>. </u>	
Low risk of bias		
B. Applicability		
Concern that the definition, assessment or timing of predictors in	CONCERN:	Low
the model do not match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 3: Outcome		
A. Risk of Bias		
3.1 Was the outcome determined appropriately?		Yes
3.2 Was a pre-specified or standard outcome definition used?		Yes
3.3 Were predictors excluded from the outcome definition?		Yes
3.4 Was the outcome defined and determined in a similar way for	all participants?	Yes
3.5 Was the outcome determined without knowledge of predictor	information?	Yes
3.6 Was the time interval between predictor assessment and	d outcome determination	Yes
appropriate?		
Risk of bias introduced by the outcome or its determination	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		
B. Applicability		
Concern that the outcome, its definition, timing or	CONCERN:	Low
determination do not match the review question	(low/ high/ unclear)	
Rationale of applicability rating:		
Match the review question		

DOMAIN 4: Analysis		
Risk of Bias		
4.1 Were there a reasonable number of participants with the outcom	e?	Yes
4.2 Were continuous and categorical predictors handled appropriate	ly?	Yes
4.3 Were all enrolled participants included in the analysis?		Yes
4.4 Were participants with missing data handled appropriately?		Yes
4.5 Was selection of predictors based on univariable analysis avoided?		Yes
4.6 Were complexities in the data (e.g. censoring, competing risks, sampling of controls)		Yes
accounted for appropriately?		
4.7 Were relevant model performance measures evaluated appropriately?		Yes
4.8 Were model overfitting and optimism in model performance accounted for?		Not applicable
4.9 Do predictors and their assigned weights in the final model correspond to the results		Not applicable
from multivariable analysis?		
Risk of bias introduced by the analysis	RISK:	Low
	(low/ high/ unclear)	
Rationale of bias rating:		
Low risk of bias		